Therapeutic immune tolerant human islet-like organoids (HILOs) for Type 1 Diabetes

Grant Award Details

Therapeutic immune tolerant human islet-like organoids (HILOs) for Type 1 Diabetes

Grant Type: Quest - Discovery Stage Research Projects

Grant Number: DISC2-11175

Investigator:

Name:	Ronald Evans
Institution:	Salk Institute for Biological Studies
Type:	PI

Disease Focus: Diabetes, Metabolic Disorders, Type 1 diabetes

Human Stem Cell Use: Embryonic Stem Cell

Award Value: $1,637,209

Status: Pre-Active

Grant Application Details

Application Title: Therapeutic immune tolerant human islet-like organoids (HILOs) for Type 1 Diabetes

Public Abstract:

Research Objective

Development of immune tolerant human islet-like organoids for transplantation into diabetic patients.

Impact

Our proposal will progress the development of an unlimited, reproducible source of immune tolerant engineered islets for transplantation into Type I diabetics.

Major Proposed Activities

- Demonstrate efficacy of immune tolerant HILOs in humanized diabetic mice
- Demonstrate safety of immune tolerant HILOs
- Incorporate a “kill switch” into immune tolerant HILOs

Statement of Benefit to California:	Diabetes affects 3 million people in California. Type 1 diabetes is a particular burden as it requires life-long administration of insulin. Allo- transplantation of islets is limited by availability of donor cells. This proposal will progress the development of functional islet-like organoids as an unlimited, reproducible source by engineering in immune tolerance to enhance and prolong functionality and survival upon transplantation into diabetic patients.

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